

### REMARKS

Applicant respectfully requests reconsideration of the present application in view of the foregoing amendments and these comments.

Claims 36-70 are pending. Claims 36-37, 40-42, 44-48, 50, 54-55, 57-58, 67, and 70 are currently amended. Upon entry of the response, therefore, claims 36-70 will be pending.

#### Specification Objection

The specification is subject to objection to for certain informalities. The specification has been revised to address the examiner's underlying concerns.

#### Claim Objections

Claim 37 is subject to objection for certain informalities. Claim 37 has been revised to address the examiner's underlying concerns.

#### 35 U.S.C. § 112 Rejections

Claims 36-48, 64-66, and 68-70 stand rejected for alleged indefiniteness. Claims 40 and 46-48 have been amended to remove the means plus function limitations. Support for the corresponding structure, material, or acts for the means plus function limitations in claims 36-37 can be found in the specification, *e.g.*, at page 7, line 36 – page 9, line 26 of the application as filed. Claims 37, 41-42, 44-46, 50, 54-55, and 67 have also been amended to effect greater clarity. The rejection of claims 37 and 50, found in paragraph 3, of page 5 of the Office Action is traversed. The limitation referred to is a further limitation of the at least two or more electrodes comprising at least four electrodes. The rejection of claim 37, found in paragraph 6, of page 5 of the Office Action is traversed because the cited language is not contained in claim 37.

#### 35 U.S.C. § 101 Rejections

Claims 36-70 are rejected for allegedly being directed to non-statutory subject matter. Regarding the first rejection, the disclosure does not teach that the probe of claims 36 and 70 is attached to the body. The conducting medium is not part of the human body. The specification does not disclose that the probe is attached to the body. Thus, the language of claims 36 and 70 that the probe comprises a conducting medium attached to the probe does not disclose

components of the human body. Regarding the second rejection, claim 67 has been amended to be directed toward one statutory category.

35 U.S.C. § 103 Rejections

Claims 36-38, 41-44, 46, 48-51, 54-59, and 63-70 are rejected over U.S. Published Application No. 2003/0004434 (“Greco”). Claims 39 and 52 likewise are rejected over Greco in view of “A system for measurements of micturition urethra cross-sectional areas and pressures” Med. and Bio Eng and Computing July 1983 (“Mortesen”). Claims 40 and 53 likewise are rejected over Greco in view of “Simultaneous Recording of Pressure and Cross-Sectional Area in the Female Urethra: A study of Urethral Closure Function in Healthy and Stress Incontinent Women” Neurology Urodynamics 11:55-89 (1992) (“Lose”). Claim 45 is likewise rejected over Greco in view of U.S. Published Application No. 2002/0032486 (“Lazarovits”). Claims 47 and 59-62 likewise are rejected over Greco in view of WO 03/020124 (“Gregersen”).

The rejections should be withdrawn because the cited prior art does not disclose the claimed subject matter.

Claim 36 as amended calls for an apparatus for measuring the deformation of a system, *“wherein the apparatus furthermore comprises means for measuring at least one of the following electrical parameters between at least two of the two or more: potential difference, an electrical current, an impedance or resistance, the measured electrical parameter being indicative of a deformation of the probe in at least the longitudinal direction of the elongated probe.”* Claim 49 as amended calls for a method for measuring a deformation of a system by introducing into the system an elongated elastic probe, *“wherein a deformation being indicative of a deformation of the probe in at least the longitudinal direction of the elongated probe is measured by measuring an electrical parameter between at least two of the two or more electrodes.”* Greco, Greco in view of Mortesen, Greco in view of Lose, Greco in view of Lazarovits, and Greco in view of Gregersen do not disclose the claimed subject matter.

*(i) Greco*

Greco discloses a cross-sectional area (or “A”) determined by delivering high frequency alternating currents between excitation electrodes 80A and 80D and measuring the electrical conductivity of a saline solution inside a balloon 20. (Greco, para. [0005]). The balloon 20 is then inflated and deflated incrementally with saline solution during rest and proactive maneuvers, and a drop in voltage between sensing electrodes 80B and 80D is measured. (Greco, para.

[0005]). Thus, Greco discloses that electrodes 80A – 80D are used for measuring a change of cross-sectional area and not for measuring a deformation in the longitudinal directions.

Greco also discloses that a PCA catheter system 5 comprises a catheter body 10 and an expandable and resilient balloon 20. (Greco, para. [0004]). Thus, Greco discloses that the balloon is resilient 20, but does not disclose that the catheter body 10 is resilient. Moreover, one of ordinary skill in the art would not have concluded that the catheter body 10 is non-resilient.

Additionally, because Greco discloses that electrodes 80A – 80D are mounted beneath the balloon 20 on the catheter body 10. (Greco, para. [0004]). Because the electrodes 80A – 80D are mounted beneath the balloon 20 on the catheter body 10 and the catheter body 10 is non-resilient, the electrodes 80A – 80D cannot be displaced in relation to each other in a longitudinal direction. In other words, the electrodes 80A – 80D cannot be displaced in the direction along the extension of the catheter body 10.

Finally, the Examiner refers to paragraphs [0004] – [0005] of Greco to allege that Greco discloses measuring an electrical parameter between at least two of the electrodes. (Office Action, pg. 8). Greco discloses that electrical connectors permit electrical connections to be established between a first group of elements, comprising electrodes 80A 80D, transducers 60 and 65, or temperature or other sensors, and a second group of elements, comprising external recording and/or analysis equipment. (Greco, para. [0004]). Greco, therefore, does not disclose electrical connections between elements within the first group or between elements within the second group.

In short, Greco only discloses measuring cross-sectional area, that electrodes 80A – 80D are mounted on a non-resilient element, and measuring an electrical parameter between at least two of the electrodes. Greco, therefore, fails to disclose the claimed subject matter as claims 36, 49, and their dependents recite.

***(ii) Greco in view of Mortesen***

Claims 39 and 52 depend from claims 36 and 49, respectively. As previously mentioned, Greco fails to disclose the subject matter of claims 36 and 49.

In addition, Mortesen fails to cure the deficiencies of Greco. Thus, assuming for the sake of argument that Mortesen discloses a method of monitoring deformation wherein the deformation is deduced from the measured electrical parameter by means of a pre-determined calibration function, as asserted by the Examiner, Mortesen fails to disclose, “*wherein the*

*apparatus furthermore comprises means for measuring at least one of the following electrical parameters between at least two of the two or more: potential difference, an electrical current, an impedance or resistance, the measured electrical parameter being indicative of a deformation of the probe in at least the longitudinal direction of the elongated probe,” as recited in claim 36 or, “wherein a deformation being indicative of a deformation of the probe in at least the longitudinal direction of the elongated probe is measured by measuring an electrical parameter between at least two of the two or more electrodes,” as recited in claim 49. In fact, Mortesen, like Greco, only discloses measurements of cross-sectional area and does not disclose measuring in longitudinal directions. (Mortesen, abstract).*

Accordingly, Mortesen clearly does not remedy the deficiencies identified in Greco. Moreover, it would not have been obvious to one of ordinary skill in the art at the time of invention how to modify a disclosure providing for calibration of measurements of cross-sectional areas to providing calibration of measurements in the longitudinal directions. The internal organs of the body behave differently in a cross-sectional direction from how they behave in longitudinal directions. Greco in view of Mortesen, therefore, fails to disclose the claimed subject matter as claims 36, 49, and their dependents recite.

***(iii) Greco in view of Lose***

Claims 40 and 53 depend from claims 36 and 49, respectively. As previously mentioned, Greco fails to disclose the subject matter of claims 36 and 49.

In addition, Lose fails to cure the deficiencies of Greco. Thus, assuming for the sake of argument that Lose discloses a deformation monitoring apparatus wherein the apparatus further comprising timer means for determine a timing of a change of the measured electrical parameter, as asserted by the Examiner, Lose fails to disclose, *“wherein the apparatus furthermore comprises means for measuring at least one of the following electrical parameters between at least two of the two or more: potential difference, an electrical current, an impedance or resistance, the measured electrical parameter being indicative of a deformation of the probe in at least the longitudinal direction of the elongated probe,” as recited in claim 36 or, “wherein a deformation being indicative of a deformation of the probe in at least the longitudinal direction of the elongated probe is measured by measuring an electrical parameter between at least two of the two or more electrodes,” as recited in claim 49. In fact, Lose, like Greco, only discloses*

measurements of cross-sectional area and does not disclose measuring in longitudinal directions. (Lose, pg. 82).

Accordingly, Lose clearly does not remedy the deficiencies identified in Greco. Moreover, it would not have been obvious to one of ordinary skill in the art at the time of invention how to modify a disclosure providing for calibration of measurements of cross-sectional areas to providing calibration of measurements in the longitudinal directions. The internal organs of the body behave differently in a cross-sectional direction from how they behave in longitudinal directions. Greco in view of Lose, therefore, fails to disclose the claimed subject matter as claims 36, 49, and their dependents recite.

***(iv) Greco in view of Lazarovits***

Claim 45 depends from claim 36. As previously mentioned, Greco fails to disclose the subject matter of claim 36.

In addition, Lazarovits fails to cure the deficiencies of Greco. Thus, assuming for the sake of argument that Lazarovits discloses a balloon device wherein the inflation medium is liquid gas or solid or power, as asserted by the Examiner, Lazarovits fails to disclose, “*wherein the apparatus furthermore comprises means for measuring at least one of the following electrical parameters between at least two of the two or more: potential difference, an electrical current, an impedance or resistance, the measured electrical parameter being indicative of a deformation of the probe in at least the longitudinal direction of the elongated probe,*” as recited in claim 36 or, “*wherein a deformation being indicative of a deformation of the probe in at least the longitudinal direction of the elongated probe is measured by measuring an electrical parameter between at least two of the two or more electrodes,*” as recited in claim 49. In fact, Lazarovits does not appear to disclose any measurements. Additionally, Lazarovits does not appear to disclose the inflation medium being a conductive medium. Greco in view of Lazarovits, therefore, fails to disclose the claimed subject matter as claim 36 and its dependents recite.

***(v) Greco in view of Gregersen***

Claims 47 and 59-62 depend from claim 36 or 49. As previously mentioned, Greco fails to disclose the subject matter of claims 36 and 49.

In addition, Gregersen fails to cure the deficiencies of Greco. Thus, Gregersen fails to disclose, “*wherein the apparatus furthermore comprises means for measuring at least one of the following electrical parameters between at least two of the two or more: potential difference, an*

*electrical current, an impedance or resistance, the measured electrical parameter being indicative of a deformation of the probe in at least the longitudinal direction of the elongated probe,” as recited in claim 36 or, “wherein a deformation being indicative of a deformation of the probe in at least the longitudinal direction of the elongated probe is measured by measuring an electrical parameter between at least two of the two or more electrodes,” as recited in claim 49.* Greco in view of Gregersen, therefore, fails to disclose the claimed subject matter as claims 36, 49, and their dependents recite.

Favorable consideration and withdrawal of all the prior-art rejections is requested.

### CONCLUSION

Applicant submits that the present application is in condition for allowance, and a prompt indication to this effect is requested. Examiner Stout also is invited to contact the undersigned directly, should he feel that any issue warrants further consideration.

The Commissioner is hereby authorized to charge any additional fees which may be required under 37 C.F.R. §§ 1.16-1.17, and to credit any overpayment to Deposit Account No. 19-0741. Should no proper payment accompany this response, then the Commissioner is authorized to charge the unpaid amount to the same deposit account.

If any extension is needed for timely acceptance papers submitted, then Applicant hereby petitions for such extension under 37 C.F.R. §1.136 and authorizes payment of any such extensions fees to Deposit Account No. 19-0741.

Respectfully submitted,

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